



JSC Photos by Robert Markowitz 99e03898

Goliad High School student Sarah Taylor and counselor Brenda Gohmert evaluate their capability to turn EVA fasteners at different torque levels without using a foot restraint.



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Industrial High School students conduct Asteroid Rover Attitude Control Experiment.

High school students soar to new heights

'This is the most awesome thing I've ever done in my entire life. I learned how to communicate and get along with my crew. Everyone at NASA is so dedicated and enjoys their work so much.'

—Sally Rost, junior at Orangefield High School



Aboard NASA's KC-135, Rost conducted her first experiment in microgravity. After three months of developing and planning their experiment, Rost and her fellow teammates were excited. Their experiment, designed to use the microgravity environment aboard the KC-135 to generate a 3-dimensional magnetic field, worked the way the team predicted.

"Our flight crew and our ground crew all worked well together," said teammate Nancy Locke. "It was a great learning experience. First of all, we learned how magnetic fields interact; and through the tours and working with our JSC mentor, we also learned about the different careers available at the Johnson Space Center."

Seventeen high school teams from across eastern Texas got a chance to fly their experiments aboard the KC-135 last month in the first Texas-wide NASA Reduced Gravity Student Flight Opportunities high school

program, funded by NASA and administered by the Texas Space Grant Consortium. Nine flight teams flew the week of April 12 and eight teams the week of April 19. The teams were drawn from high schools in Edinburg, Corpus Christi, Victoria, Houston, Beaumont, Huntsville, Kilgore, Mount Pleasant, Wichita Falls and Richardson. Each region provided two teams of students. Next year, students will be selected from western and northern areas of the state.

Each team was comprised of four student flyers, a teacher, a JSC or contractor scientist or engineer who served as a mentor, and, occasionally, a professional journalist. Most teams also had a ground crew of up to eight students. Each team got two flights aboard the microgravity aircraft; teachers flew twice

and mentors flew once. Journalists flew once with some teams.

Experiments flown aboard the KC-135 covered a vast range of scientific inquiries from analyzing the effects of varying acceleration forces on simple household mechanical devices, to evaluating the Maintenance Work Area that will be used on the International Space Station, to studying human adaptation to microgravity and its effects on aging.

"The purpose of the program is to provide students with an educational experience that will encourage them to pursue studies in science, math and technology," said Donn Sickorez, JSC's university affairs officer. "Further, the program let them work with engineers and learn more about the engineering profession. The students may be interested in aerospace, but until now they may have never had the opportunity to be exposed to the field firsthand."

Heidi Airey, a teacher at Orangefield High School, agrees. "This program has been fantastic. The students were able to meet engineers and learn more about engineering so that they can explore whether or not they may be interested in entering the profession in the future. In the classroom it's hard to give them this exposure. Moreover, the students learned not only about magnets, science and engineering but also about the importance of organizational skills."

In addition to learning important lessons in engineering, science and math, the students gained a deeper appreciation of teamwork.

"Our experiment was using an accelerometer to measure the head motion of a dummy during microgravity," said Erin Taylor, Van Alstyne High School student. "We learned the value of cooperation. We learned how to work together as a team."

"The program brought the students

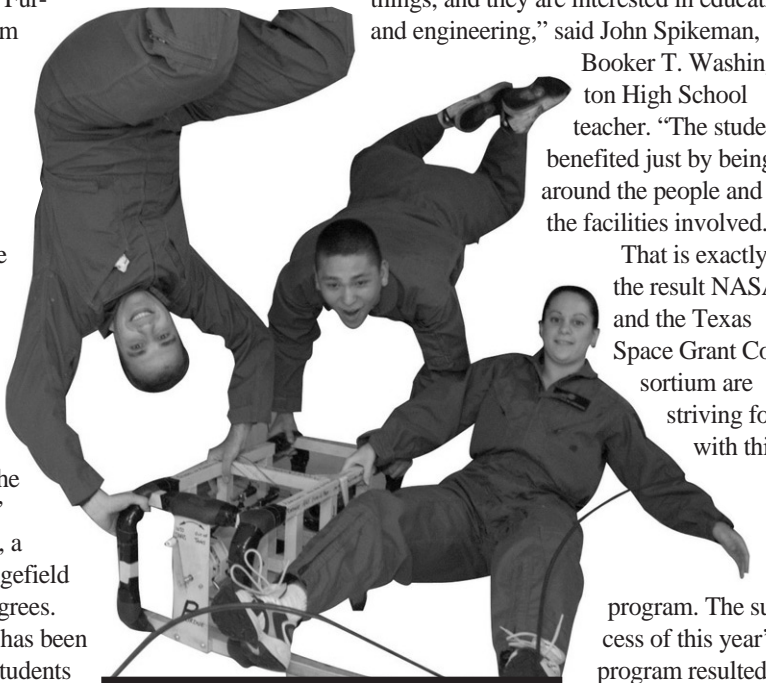
together as a more cohesive group," said Carol Smith, Van Alstyne High School teacher. "The program also gave them a wider perception of what engineering is and how science can be applied to the skills that they learn in school."

The opportunity to fly aboard the KC-135 followed a 3-month "internship" for the student flyers, during which time they worked with a JSC or contractor scientist or engineer who served as a team mentor. This experience was as important as the flight itself. It's how the students learned about what engineers do and what opportunities are available in the profession.

"This was an incredible experience because it showed me and my students that NASA is made up of real people doing real things, and they are interested in education and engineering," said John Spikeman,

Booker T. Washington High School teacher. "The students benefited just by being around the people and the facilities involved."

That is exactly the result NASA and the Texas Space Grant Consortium are striving for with this



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program. The success of this year's program resulted from the coopera-

tion of many organizations.

"The program would have been impossible to implement without the cooperation of JSC, the contractor community, Space Center Houston, the Texas Space Grant Consortium, the Texas Education Agency, and all of the teachers from the selected high schools," said Sickorez.

The program was so successful that many students are already looking forward to flying again once they begin their university studies.

"We tested torque on an object in microgravity," said Brian Booth, Central High School student. "If we were to do this experiment on the college level, we would have more flyers to gain a broader range of experience." ■



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Orangefield High School students discover the 3-dimensional shape of a magnetic field using iron filings and powerful magnets.